

# **R309-200 Drinking Water Standards (Effective December 9, 2002)**

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## **R309-200 Drinking Water Standards**

### ***R309-200-1. Purpose.***

The purpose of this rule is to set forth the water quality and drinking water standards for public water systems.

### ***R309-200-2. Authority.***

This rule is promulgated by the Drinking Water Board as authorized by Title 19, Environmental Quality Code, Chapter 4, Safe Drinking Water Act, Subsection 104 of the Utah Code and in accordance with 63-46a for the same, known as the Administrative Rulemaking Act.

### ***R309-200-3. Definitions.***

Definitions for certain terms used in this rule are given in R309-110 but may be further clarified herein.

### ***R309-200-4. General.***

(1) Maximum contaminant levels (MCLs) and treatment techniques are herein established for those routinely measurable substances which may be found in water supplies. "Primary" standards and treatment techniques are established for the protection of human health. "Secondary" regulations are established to provide guidance in evaluating the aesthetic qualities of drinking water.

(2) The applicable "Primary" standards and treatment techniques shall be met by all public drinking water systems. The "Secondary" standards are recommended levels which should be met in order to avoid consumer complaint.

(3) The methods used to determine compliance with these maximum contaminant levels and treatment techniques are given in R309-205 through R309-215. Analytical techniques which shall be followed in making the required determinations shall be as given in 40 CFR 141 as published on July 1, 2001 by the Office of the Federal Register.

(4) Unless otherwise required by the Board, the effective dates on which new analytical methods shall be initiated are identical to the dates published in 40 CFR 141 on July 1, 2001 by the Office of the Federal Register.

(5) If the water fails to meet these minimum standards, then certain public notification procedures shall be carried out, as outlined in R309-220. Water suppliers shall also keep analytical records in their possession, for a required length of time, as outlined in R309-105-17.

### ***R309-200-5. Primary Drinking Water Standards.***

#### **(1) Inorganic Contaminants.**

(a) The maximum contaminant levels (MCLs) for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, sodium, thallium and total dissolved solids are applicable to community and non-transient non-community water systems.

(b) The MCLs for nitrate, nitrite, and total nitrate, nitrite and sulfate are applicable to community, non-transient non-community, and transient non-community water systems.

(c) The maximum contaminant levels for inorganic chemicals are listed in Table 200-1.

TABLE 200-1 PRIMARY INORGANIC CONTAMINANTS		
	CONTAMINANT	MAXIMUM CONTAMINANT LEVEL
1.	Antimony	0.006 mg / L
2.	Arsenic	0.05 mg / L
3.	Asbestos	7 Million Fibers / liter (longer than 10 um)
4.	Barium	2 mg / L
5.	Beryllium	0.004 mg / L
6.	Cadmium	0.005 mg / L
7.	Chromium	0.1 mg / L
8.	Cyanide (as free Cyanide)	0.2 mg / L
9.	Fluoride	4.0 mg / L
10.	Mercury	0.002 mg / L
11.	Nickel	--- (see note 1 below)
12.	Nitrate	10 mg / L (as Nitrogen) (see note 4 below)
13.	Nitrite	1mg / L (as Nitrogen)
14.	Total Nitrate and Nitrite	10 mg / L (as Nitrogen)
15.	Selenium	0.05 mg / L

16.	Sodium	--- (see note 1 below)
17.	Sulfate	1000 mg / L (see note 2 below)
18.	Thallium	0.002 mg / L
19.	Total Dissolved Solids	2000 mg / L (see note 3 below)

NOTE:

(1) No maximum contaminant level has been established for nickel and sodium. However, these contaminant shall be monitored and reported in accordance with the requirements of R309-205-5(3).

(2) If the sulfate level of a public (community, NTNC and non-community) water system is greater than 500 mg/L , the supplier shall satisfactorily demonstrate that:

(a) No better quality water is available, and

(b) The water shall not be available for human consumption from commercial establishments.

In no case shall the Board allow the use of water having a sulfate level greater than 1000 mg/L.

(3) If TDS is greater than 1000 mg/L , the supplier shall satisfactorily demonstrate to the Board that no better water is available. The Board shall not allow the use of an inferior source of water if a better source of water (i.e. lower in TDS) is available.

(4) In the case of a non-community water systems which exceed the MCL for nitrate, the Executive Secretary may allow, on a case-by-case basis, a nitrate level not to exceed 20 mg/L if the supplier can adequately demonstrate that:

(a) such water will not be available to children under 6 months of age as may be the case in hospitals, schools and day care centers; and

(b) there will be continuous posting of the fact that nitrate levels exceed 10 mg/L and the potential health effect of exposure in accordance with R309-220-12; and

(c) the water is analyzed in conformance to R309-205-5(4); and

(d) that no adverse health effects will result.

## **(2) Lead and copper.**

(a) The lead action level is exceeded if the concentration of lead in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with R309-210-6(3) is greater than 0.015 mg/L (i.e., if the "90th percentile" lead level is greater than 0.015 mg/L).

(b) The copper action level is exceeded if the concentration of copper in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with R309-210-6(3) is greater than 1.3 mg/L (i.e., if the "90th percentile" copper level is greater than 1.3 mg/L).

(c) The 90th percentile lead and copper levels shall be computed as follows:

(i) The results of all lead or copper samples taken during a monitoring period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Each sampling result shall be assigned a number, ascending by single integers beginning with the number 1 for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level shall be equal to the total number of samples taken.

(ii) The number of samples taken during the monitoring period shall be multiplied by 0.9.

(iii) The contaminant concentration in the numbered sample yielded by the calculation in paragraph (c)(ii) above is the 90th percentile contaminant level.

(iv) For water systems serving fewer than 100 people that collect 5 samples per monitoring period, the 90th percentile is computed by taking the average of the highest and second highest concentrations.

## **(3) Organic Contaminants.**

The following are the maximum contaminant levels for organic chemicals. For the purposes of R309-100 through R309-R309-605, organic chemicals are divided into three categories: Pesticides/PCBs/SOCs, volatile organic contaminants (VOCs) and total trihalomethanes.

### **(a) Pesticides/PCBs/SOCs**

The MCLs for organic contaminants listed in Table 200-2 are applicable to community water systems and non-transient, non-community water systems.

TABLE 200-2 PESTICIDE/PCB/SOC CONTAMINANTS		
	CONTAMINANT	MAXIMUM CONTAMINANT LEVEL
1.	Alachlor	0.002 mg / L
2.	Aldicarb	(see note 1 below)
3.	Aldicarb sulfoxide	(see note 1 below)
4.	Aldicarb sulfone	(see note 1 below)
5.	Atrazine	0.003 mg / L
6.	Carbofuran	0.04 mg / L
7.	Chlordane	0.002 mg / L
8.	Dibromochloropropane	0.0002 mg / L
9.	2, 4-D	0.07 mg / L
10.	Ethylene dibromide	0.00005 mg / L
11.	Heptachlor	0.0004 mg / L
12.	Heptachlor epoxide	0.0002 mg / L
13.	Lindane	0.0002 mg / L
14.	Methoxychlor	0.04 mg / L
15.	Polychlorinated biphenyls	0.0005 mg / L
16.	Pentachlorophenol	0.001 mg / L
17.	Toxaphene	0.003 mg / L
18.	2,4,5-TP	0.05 mg / L
19.	Benzo (a) pyrene	0.0002 mg / L
20.	Dalapon	0.2 mg / L
21.	Di (2-ethylhexyl) adipate	0.4 mg / L
22.	Di (2-ethylhexyl) phthalate	0.006 mg / L
23.	Dinoseb	0.007 mg / L
24.	Diquat	0.02 mg / L
25.	Endothall	0.1 mg / L
26.	Endrin	0.002 mg / L
27.	Glyphosate	0.7 mg / L
28.	Hexachlorobenzene	0.001 mg / L
29.	Hexachlorocyclopentadiene	0.05 mg / L
30.	Oxamyl (Vydate)	0.2 mg / L
31.	Picloram	0.5 mg / L
32.	Simazine	0.004 mg / L
33.	2,3,7,8-TCDD (Dioxin)	0.00000003 mg / L

Note 1: The MCL for this contaminant is under further review, however, this contaminant shall be monitored in accordance with R309-205-6(1).

**(b) Volatile organic contaminants**

The maximum contaminant levels for organic contaminants listed in Table 200-3 apply to community and non-transient non-community water systems.

TABLE 200-3 VOLATILE ORGANIC CONTAMINANTS		
	CONTAMINANT	MAXIMUM CONTAMINANT LEVEL
1.	Vinyl chloride	0.002 mg / L
2.	Benzene	0.005 mg / L
3.	Carbon tetrachloride	0.005 mg / L
4.	1,2-Dichloroethane	0.005 mg / L
5.	Trichloroethylene	0.005 mg / L
6.	para-Dichlorobenzene	0.075 mg / L
7.	1,1-Dichloroethylene	0.007 mg / L
8.	1,1,1-Trichloroethane	0.2 mg / L
9.	Cis-1,2-Dichloroethylene	0.07 mg / L
10.	1,2-Dichloropropane	0.005 mg / L
11.	Ethylbenzene	0.7 mg / L
12.	Monochlorobenzene	0.1 mg / L
13.	o-Dichlorobenzene	0.6 mg / L
14.	Styrene	0.1 mg / L
15.	Tetrachloroethylene	0.005 mg / L
16.	Toluene	1 mg / L
17.	Trans-1,2-Dichloroethylene	0.1 mg / L
18.	Xylenes (total)	10 mg / L
19.	Dichloromethane	0.005 mg / L
20.	1,2,4-Trichlorobenzene	0.07 mg / L
21.	1,1,2-Trichloroethane	0.005 mg / L

**(c) Disinfection Byproducts and Disinfectant Residuals:**

(i) Community and Non-transient non-community water systems. Surface Water systems serving 10,000 or more persons shall comply with this section beginning January 1, 2002. Surface water systems serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water shall comply with this section beginning January 1, 2004. Community water systems utilizing only groundwater sources serving 10,000 persons or more shall monitor in accordance with R309-210-9 and meet the MCL listed in paragraph (vii) of this section until December 31, 2003.



(ii) Transient non-community water systems. Surface water systems serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant shall comply with the chlorine dioxide MRDL beginning January 1, 2002. Surface water systems serving fewer than 10,000 persons and using chlorine dioxide as a disinfectant or oxidant and systems using only ground water not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant shall comply with the chlorine dioxide MRDL beginning January 1, 2004.

(iii) The maximum contaminant levels (MCLs) for disinfection byproducts are listed in Table 200-4.

TABLE 200-4 DISINFECTION BYPRODUCTS	
Total Trihalomethanes (TTHM)	0.080 mg/l
Haloacetic acids (five) (HAA5)	0.060 mg/l
Bromate	0.010 mg/l
Chlorite	1.0 mg/l

(iv) The maximum residual disinfectant levels (MRDLs) are listed in Table 200-5.

TABLE 200-5 MAXIMUM RESIDUAL DISINFECTANT LEVELS	
Chlorine	4.0 mg/l (as $\text{Cl}_2$ )
Chloramines	4.0 mg/l (as $\text{Cl}_2$ )
Chlorine dioxide	0.8 mg/l (as $\text{ClO}_2$ )

(v) Control of Disinfectant Residuals. Notwithstanding the MRDLs listed in Table 200-5, systems may increase residual disinfectant levels in the distribution system of chlorine or chloramines (but not chlorine dioxide) to a level and for a time necessary to protect public health, to address specific microbiological contamination problems caused by circumstances such as, but not limited to, distribution line breaks, storm run-off events, source water contamination events, or cross-connection events.

(vi) A system that is installing GAC or membrane technology to comply with this section may apply to the Executive Secretary for an extension of up to 24 months past the dates in paragraph (c)(i) of this section, but not beyond December 31, 2003. In granting the extension, the Executive Secretary shall set a schedule for compliance and may specify any interim measures that the system shall take. Failure to meet the schedule or

interim treatment requirements constitutes a violation of Utah Public Drinking Water Rules.

(vii) Community water systems utilizing only groundwater sources serving 10,000 persons or more shall monitor in accordance with R309-210-9 and meet the following MCL until December 31, 2003.

(A) The running average of analyses of quenched TTHM samples for four consecutive calendar quarters shall not exceed 100 micrograms per liter.

(B) The single sample Total Trihalomethane Formation Potential (THMFP) shall not exceed 100 micrograms per liter. Approval is needed from the Executive Secretary to substitute this test for TTHM samples and may only be used for groundwater sources. Compliance for each source is based on measurement of this sample.

#### **(4) Radiologic Chemicals.**

(a) Compliance dates. Compliance dates for combined radium-226 and -228, gross alpha particle activity, gross beta particle and photon radioactivity, and uranium: Community water systems shall comply with the MCLs listed in paragraphs (b), (c), (d), and (e) of this section beginning December 8, 2003 and compliance shall be determined in accordance with the requirements of this subsection (4) and R309-205-7. Compliance with reporting requirements for the radionuclides under R309-220 and R309-225 is required on December 8, 2003.

(b) Combined radium-226 and -228. The maximum contaminant level for combined radium-226 and radium-228 is 5 pCi/L. The combined radium-226 and radium-228 value is determined by the addition of the results of the analysis for radium-226 and the analysis for radium-228.

(c) Gross alpha particle activity (excluding radon and uranium). The maximum contaminant level for gross alpha particle activity (including radium-226 but excluding radon and uranium) is 15 pCi/L.

(d) The MCL for beta particle and photon radioactivity.

(i) The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year (mrem/year).

(ii) Except for the radionuclides listed in Table 200-6, the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents shall be calculated on the basis of 2 liters per day drinking water intake using the 168 hour data list in "Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure," NBS (National Bureau of Standards) Handbook 69 as amended August 1963, U.S. Department of Commerce. Copies of this document are available from the National Technical Information Service, NTIS ADA 280 282, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The toll-free number is 800-553-6847. Copies may be inspected at the Division of Drinking Water offices. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed 4 mrem/year.

TABLE 200-6 MAN-MADE RADIONUCLIDE CONTAMINANTS		
Average annual concentrations assumed to produce a total body or organ dose of four mrem/year.		
RADIONUCLIDE	CRITICAL ORGAN	PCi per liter
Tritium	Total Body	20,000
Strontium-90	Bone Marrow	8

(e) The MCL for uranium. The maximum contaminant level for uranium is 30 µg/L.

## (5) Turbidity

(a) Large surface water systems serving 10,000 or more population shall provide treatment consisting of both disinfection, as specified in R309-200-5(7)(a), and filtration treatment which complies with the requirements of paragraph (i), (ii) or (iii) of this section by January 1, 2002.

(i) Conventional filtration treatment or direct filtration.

(A) For systems using conventional filtration or direct filtration, the turbidity level of representative samples of a system's filtered water shall be less than or equal to 0.3 NTU in at least 95 percent of the measurements taken each month, measured as specified in R309-200-4(3) and R309-215-9.

(B) The turbidity level of representative samples of a system's filtered water shall at no time exceed 1 NTU, measured as specified in R309-200-4(3) and R309-215-9.

(C) A system that uses lime softening may acidify representative samples prior to analysis using a protocol approved by the Executive Secretary.

(ii) Filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration. A public water system may use a filtration technology not listed in paragraph (i) or (iii) of this section if it demonstrates to the Executive Secretary, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of R309-200-7, consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts and 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts, and the Executive Secretary approves the use of the filtration technology. For each approval, the Executive Secretary will set turbidity performance requirements that the system shall meet at least 95 percent of the time and that the system may not exceed at any time at a level that consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts, 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts.

(iii) The turbidity limit for slow sand filtration and diatomaceous earth filtration shall be less than or equal to 1.0 NTU in at least 95 percent of the measurements taken each month, measured as specified in R309-215-9(1)(c) and (d). For slow sand filtration only, if the Executive Secretary determines that the system is capable of achieving 99.9 percent removal and inactivation of *Giardia lamblia* cysts at some turbidity level higher than 1.0 NTU in at least 95 percent of the measurements, the Executive Secretary may substitute this higher turbidity limit for that system.

(b) Small surface water systems serving a population less than 10,000:

(i) The following turbidity limit applies to finished water from small surface water treatment facilities providing water to all public water

systems whether community, non-transient non-community or non-community.

(ii) The limit for turbidity in drinking water from treatment facilities which utilize surface water sources or ground water sources under the direct influence of surface water is 0.5 NTU in at least 95 percent of the samples as required by R309-215-9(1)(c) for conventional complete treatment and direct filtration. If the Executive Secretary determines that the system is capable of achieving at least 99.9 percent removal and inactivation of *Giardia lamblia* cysts at some turbidity level higher than 0.5 NTU in at least 95 percent of the measurements, the Executive Secretary may substitute this higher turbidity limit for that system. However, in no case may the Executive Secretary approve a turbidity limit that allows more than 1.0 NTU in more than 5 percent of the samples taken each month, measured as specified in R309-215-9(1)(c) and (d).

(A) The turbidity limit for slow sand filtration and diatomaceous earth filtration shall be less than or equal to 1.0 NTU in at least 95 percent of the measurements taken each month, measured as specified in R309-215-9(1)(c) and (d). For slow sand filtration only, if the Executive Secretary determines that the system is capable of achieving 99.9 percent removal and inactivation of *Giardia lamblia* cysts at some turbidity level higher than 1.0 NTU in at least 95 percent of the measurements, the Executive Secretary may substitute this higher turbidity limit for that system.

(B) The turbidity level of representative samples shall at no time exceed 5.0 NTU for any treatment technique, measured as specified in R309-215-9(1)(c) and (d).

(C) The Executive Secretary may allow the higher turbidity limits for the above treatment techniques only if the supplier of water can demonstrate to the Executive Secretary's satisfaction that the higher turbidity does not do any of the following:

(I) Interfere with disinfection;

(II) Prevent maintenance of an effective disinfectant agent throughout the distribution system;

(III) Interfere with microbiological determinations; or

(IV) Interfere with a treatment technique's ability to achieve the required log removal/inactivation of pathogens or virus as required by R309-505-6(2)(a) and (b).

(c) Ground water sources not under the direct influence of surface water:

(i) The following turbidity limit applies to community water systems only.

(ii) The limit for turbidity in drinking water from ground water sources not under the direct influence of surface sources is 5.0 NTU based on an average for two consecutive days pursuant to R309-205-8(3).

## **(6) Microbiological Quality**

(a) The maximum contaminant level (MCL) for microbiological contaminants for all public water systems is:

(i) For a system which collects less than 40 total coliform samples per month, no more than one sample per month may be total coliform-positive.

(ii) For a system which collects 40 or more total coliform samples per month, no more than 5.0 percent of the samples collected during a month may be total coliform-positive.

(b) Any fecal coliform-positive or *Escherichia coli* (*E. coli*)-positive repeat sample or any total coliform-positive repeat sample following a fecal coliform positive or *E. coli*-positive routine sample constitutes a violation of the MCL for total coliforms. For the purposes of public notification requirements in R309-220-5 this is a violation that may pose an acute risk to health.

(c) For NTNC and transient non-community systems that are required to sample at a rate of less than one per month, compliance with paragraphs (a) or (b) of this subsection shall be determined for the month in which the sample was taken.

## **(7) Disinfection**

Continuous disinfection is recommended for all water sources. It shall be required of all ground water sources which do not consistently meet standards of bacteriologic quality. Surface water sources or ground water sources under direct influence of surface water shall be disinfected and continuously monitored for disinfection residual during the course of required conventional complete treatment for systems serving greater than 3,300 people. Disinfection shall not be considered a substitute for inadequate collection or filtration facilities.

Successful disinfection assures 99.9 percent inactivation of *Giardia lamblia* cysts and 99.99 percent inactivation of enteric viruses. Both filtration and disinfection are

considered treatment techniques to protect against the potential adverse health effects of exposure to *Giardia lamblia*, viruses, *Legionella*, and heterotrophic bacteria in water. Minimum disinfection levels are set by "CT" values as defined in R309-110.

(a) Each public water system that provides filtration treatment shall provide disinfection treatment as follows:

(i) The disinfection treatment shall be sufficient to ensure that the total treatment processes of the system achieve at least 99.9 percent (3-log) inactivation and/or removal of *Giardia lamblia* cysts and at least 99.99 percent (4-log) inactivation and/or removal of viruses, as determined by the Executive Secretary.

(ii) The residual disinfectant concentration in the water entering the distribution system cannot be less than 0.2 mg/L for more than 4 hours.

(iii) The residual disinfectant concentration in the distribution system, measured as combined chlorine or chlorine dioxide, cannot be undetectable in more than 5 percent of the samples each month, for any two consecutive months that the system serves water to the public. Water in the distribution system with a heterotrophic bacteria concentration less than or equal to 500/ml, measured as heterotrophic plate count (HPC) is deemed to have a detectable disinfectant residual for purposes of determining compliance with this requirement. Thus, the value "V" in the following formula cannot exceed 5 percent in one month, for any two consecutive months.

$$V = ((c + d + e) / (a + b)) \times 100 \text{ where:}$$

a = number of instances where the residual disinfectant concentration is measured;

b = number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;

c = number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;

d = number of instances where no residual disinfectant concentration is detected and where HPC is greater than 500/ml;

e = number of instances where the residual disinfectant concentration is not measured and HPC is greater than 500/ml.

(b) If the Executive Secretary determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified in Heterotrophic Plate Count (Pour Plate Method) as set forth in the latest edition of Standard Methods for the Examination of Water and Wastewater, 1985, American Public Health Association et al. (Method 907A in the 16th edition) and that the system is providing adequate disinfection in the distribution system, the requirements of R309-200-5(7)(a)(iii) do not apply.

(c) If a system utilizes a combination of sources, some surface water influenced (requiring filtration and disinfection treatment) and others deemed ground water (not requiring any treatment, even disinfection), the Executive Secretary may, based on site-specific considerations, allow sampling for residual disinfectant or HPC at locations other than those specified by total coliform monitoring required by R309-210-5.

### ***R309-200-6. Secondary Drinking Water Standards for Community, Non-Transient Non-Community and Transient Non-Community Water.***

The Secondary Maximum Contaminant Levels for public water systems deals with substances which affect the aesthetic quality of drinking water. They are presented here as recommended limits or ranges and are not grounds for rejection. The taste of water may be unpleasant and the usefulness of the water may be impaired if these standards are significantly exceeded.

TABLE 200-5 SECONDARY INORGANIC CONTAMINANTS	
CONTAMINANT	LEVEL
Aluminum	0.05 to 0.2 mg / L
Chloride	250 mg / L
Color	15 Color units
Copper	1 mg / L
Corrosivity	Non-corrosive
Fluoride	2.0 mg / L (see note below)
Foaming Agents	0.5 mg / L
Iron	0.3 mg / L
Manganese	0.05 mg / L
Odor	3 Threshold Odor Number
pH	6.5-8.5
Silver	0.1 mg / L
Sulfate	250 mg / L (See note below)
TDS	500 mg / L (See note below)
Zinc	5 mg / L



Note: Maximum allowable Fluoride, TDS and Sulfate levels are given in the Primary Drinking Water Standards, R309-200-5(1). They are listed as secondary standards because levels in excess of these recommended levels will likely cause consumer complaint.

### ***R309-200-7. Treatment Techniques and Unregulated Contaminants.***

(1) The Board has determined that the minimum level of treatment as described in R309-525 and R309-530 herein or its equivalent is required for surface water sources and ground water contaminated by surface sources.

(2) For surface water systems, R309-200, 215, 505, 510, 520, 525 and 530 establish or extend treatment technique requirements in lieu of maximum contaminant levels for the following contaminants: *Giardia lamblia*, viruses, heterotrophic plate count bacteria, *Legionella*, *Cryptosporidium*, and turbidity. The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:

(a) at least 99.9 percent (3-log) removal and/or inactivation of *Giardia lamblia* cysts between a point where the raw water is not subject to re-contamination by surface water runoff and a point downstream before or at the first customer;

(b) at least 99.99 percent (4-log) removal and/or inactivation of viruses between a point where the raw water is not subject to re-contamination by surface water runoff and a point downstream before or at the first customer.

(c) At least 99 percent (2-log) removal of *Cryptosporidium* between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer. for filtered systems, or *Cryptosporidium* control under the watershed control plan for unfiltered systems.

(d) Compliance with the profiling and benchmark requirements under the provisions of R309-215-14.

(3) No MCLs are established herein for unregulated contaminants; viruses, protozoans and other chemical and biological substances. Some unregulated contaminants shall be monitored for in accordance with 40 CFR 141.40.

### ***R309-200-8. Approved Laboratories.***

(1) For the purpose of determining compliance, samples may be considered only if they have been analyzed by the State of Utah primacy laboratory or a laboratory certified by the Utah State Health Laboratory. However, measurements for pH, temperature, turbidity and disinfectant residual, daily chlorite, TOC, UV254, DOC and SUVA may, under the direction of the direct responsible charge operator, be performed by any water supplier or their representative.

(2) All samples shall be marked either: routine, repeat, check or investigative before submission of such samples to a certified lab. Routine, repeat, and check samples shall be considered compliance purposes samples.

(3) All public water systems shall either: contract with a certified laboratory to have the laboratory send all compliance purposes sample results, with the exception of Lead/Copper data, to the Division of Drinking Water, or shall inform the Division of Drinking Water that they intend to forward all compliance purposes samples to the Division. Each public water system shall furnish the Division of Drinking Water a copy of the contract with their certified laboratory or inform the Division in writing of the public water system's intent to forward the data to the Division.

(4) All sample results can be sent either electronically or in hard copy form.

**KEY: drinking water, quality standards, regulated contaminants**

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